

WHAT IS CLAIMED IS:

1. In a circuit breaker, an arrangement for venting gas produced during an electrical interruption event, comprising:

- 5 a base having at least one chamber area, said base having at least one opening adjacent said at least one chamber area; and
- a structure in said at least one chamber area adapted to direct gas caused by said electrical interruption event generally toward said at least one opening.

10 2. The arrangement of claim 1, wherein said structure has an edge portion angled toward said at least one opening such that said gas is directed along said angled edge portion to said at least one opening during said electrical interruption event.

15 3. The arrangement of claim 1, further including a trip unit base engaged to mate with at least a portion of said base and substantially enclosing said at least one chamber area with said base to form a cavity.

20 4. The arrangement of claim 3, wherein said trip unit base includes a complementary structure having an edge portion angled toward said at least one opening such that said gas is directed along said angled edge portion to said at least one opening during said electrical interruption event.

25 5. The arrangement of claim 4, wherein said structure and said complementary structure are generally flush with one another.

6. The arrangement of claim 1, wherein said base includes a floor, said at least one opening being positioned a distance away from said floor.

30 7. The arrangement of claim 6, wherein said base further includes a second structure having a surface leading away from said floor to elevate said gas away from said floor and toward said at least one opening during said electrical interruption event.

8. The arrangement of claim 1, wherein said at least one opening leads to a vent chute, said vent chute having a substantially elongated shape to direct said gas generally away from said circuit breaker.

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9. In a circuit breaker, an arrangement for reducing pressure inside a chamber area of said circuit breaker caused by gas formed during an electrical interruption event, comprising:

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a base defining at least one chamber area, said base being coupled to an interrupter assembly such that gas produced by tripping said interrupter assembly during an electrical interruption event passes generally from a vent opening of said interrupter assembly into said at least one chamber area, said base including:

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a wall portion distal the entry point of said gas from said interrupter assembly into said at least one chamber area, and

a vent chute having an opening into said at least one chamber area; and
a wall structure disposed in said at least one chamber area to direct the passing gas generally away from said wall portion and generally toward said opening of said vent chute, thereby reducing pressure in said chamber area of said circuit breaker during said electrical interruption event.

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10. The arrangement of claim 9, wherein the area between said wall portion and said wall structure defines a protected area in which substantially no gas enters during said electrical interruption event.

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11. The arrangement of claim 9, wherein said wall structure is generally one of V-shaped and U-shaped.

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12. The arrangement of claim 9, wherein said base further includes a floor, said opening of said vent chute being positioned a distance away from said floor, the arrangement further including an approach ramp adjacent said opening, said approach ramp having a surface leading away from said floor to direct said gas generally toward said opening and away from said floor.

13. The arrangement of claim 9, further including a trip unit base adapted to engage walls of said base and substantially enclose said at least one chamber area to form a cavity.

5 14. The arrangement of claim 13, wherein said trip unit includes a complementary wall structure positioned to oppose said wall structure such that said complementary wall structure and said wall structure are generally flush with one another.

10 15. The arrangement of claim 14, wherein said wall structure and said complementary wall structure operate to reduce the volume of said cavity through which said gas passes.

15 16. The arrangement of claim 9, wherein the presence of said wall structure in said at least one chamber area prevents physical damage to said base due to pressure that builds up in said at least one chamber area during said electrical interruption event.

20 17. The arrangement of claim 9, wherein said wall structure directs debris caused by an explosion of said gas generally away from said wall portion and generally toward said opening, said vent chute further directing at least some of said debris away from said circuit breaker during said electrical interruption event.

25 18. A circuit breaker, comprising:

a base defining at least one chamber area and including a vent chute having an opening leading to said at least one chamber area;

an interrupter assembly having a vent opening adjacent said at least one chamber area, said vent opening adapted to vent gas produced during an electrical interruption event generally away from said interrupter assembly and generally toward said at least one chamber area, and

30 said base further including at least one structure in said at least one chamber area and having a surface positioned at a non-perpendicular angle with respect to said vent opening to direct the gas passing generally away from said interrupter assembly toward said vent chute along said

surface such that the physical integrity of said base of said circuit breaker is maintained during said electrical interruption event.

5 19. The circuit breaker of claim 18, said base further includes a floor, said opening of said vent chute being elevated relative to said floor, the circuit breaker further including an approach ramp adjacent said opening, said approach ramp having a surface angled from said floor to said opening to elevate said gas generally toward said opening.

10 20. The circuit breaker of claim 19, wherein a cross section of said approach ramp is generally the shape of one of a triangle and a trapezoid.

 21. A circuit breaker, comprising:
a base defining at least one chamber area and including a pair of vent chutes;
15 an interrupter assembly having a vent opening adjacent said at least one chamber area, said vent opening adapted to vent gas produced during an electrical interruption event generally away from said interrupter assembly and generally toward said at least one chamber area, and
said base further including a first structure in said at least one chamber area
20 and having a first edge angled with respect to said vent opening to direct the gas passing generally away from said interrupter assembly toward a first of said pair of vent chutes, and a second edge angled with respect to said vent opening to direct the gas passing generally away from said interrupter assembly toward a second of said pair of vent chutes, thereby reducing pressure in said chamber area of said
25 circuit breaker during said electrical interruption event.

 22. The circuit breaker of claim 21, wherein said at least one structure generally forms a triangle having two edges exposed to said gas, said gas passing
30 along said two edges generally toward respective ones of said pair of vent chutes.

 23. In a circuit breaker, an arrangement for venting gas produced during an electrical interruption event, comprising:

a base defining at least one chamber area, said base having at least one opening adjacent said at least one chamber area;

means for interrupting electrical current to the electrical circuit to which said circuit breaker is connected, said means for interrupting including a vent opening leading to said at least one chamber area, said gas produced during said electrical interruption event passing through said vent opening; and

in said at least one chamber area, means for directing gas produced by said electrical interruption event generally toward said at least one opening of said base.

24. The arrangement of claim 23, wherein said means for interrupting is an interrupter assembly.

25. The arrangement of claim 23, wherein said means for directing is a structure having at least one surface angled toward said at least one opening such that said gas is directed along said angled surface to said at least one opening during said electrical interruption event.

26. The arrangement of claim 25, wherein said structure is generally one of V-shaped and U-shaped.

27. The arrangement of claim 25, wherein said structure is an approach ramp having a cross section that is generally one of a triangle and a trapezoid, said approach ramp elevating said gas toward said at least one opening during said electrical interruption event.

28. The arrangement of claim 23, wherein said at least one opening leads to a vent chute having a substantially elongated shape to direct said gas generally away from said circuit breaker.

29. The arrangement of claim 23, wherein said means for directing further directs debris produced during said electrical interruption event away from at least one wall of said base to reduce the undesirable effects of cross-phasing.